IMPERIAL
DEPARTMENT OF AGRICULTURE
FOR THE WEST INDIES.

IMPERIAL BUREAU OF MYCOLOGY

REPORT

ON THE

AGRICULTURAL DEPARTMENT, ST. LUCIA, 1924.

ISSUED BY THE IMPERIAL COMMISSIONER OF AGRICULTURE FOR THE WEST INDIES.

[Price Sixpence.]

PRINTED BY THE GOVERNMENT PRINTER AT THE GOVERNMENT PRINTING OFFICE, CASTRIES, ST. LUCIA.

1926.

FORWARDING DISEASED SPECIMENS FOR EXAMINATION.

PLANTS.

A few fragments of a diseased plant are of practically no value for scientific investigation. Sufficient material should always be sent so that the primary cause of the trouble may be located.

Full particulars should be given as to the nature and extent of the damage done, the part of plant attacked, the nature of the soil, drainage, the prevalence of disease, when it was first noticed, and whether any similar kind of disease has been previously observed in the neighbourhood.

Specimens of portions of plants attacked by fungi may be sent green packed in a well-ventilated box if the time taken for delivery is under 24 hours, but if delivery takes a longer time all leaves or soft fruits should be placed in a bottle or corked tube containing a solution made of 1 part of rum or methylated spirit and 2 parts of water. As many stages of the disease as possible should be sent, with notes as to the nature of each stage.

All specimens should be accompanied with detailed particulars of the nature of the disease and should be addressed to:—

THE AGRICULTURAL SUPERINTENDENT,
Experiment Station,
Reunion, or to—

THE AGRICULTURAL SUPERINTENDENT,
Botanic Gardens,
Castries.

INSECTS.

Observations and specimens of economic importance or otherwise will always be gladly received. The following directions should be observed in this respect:—

Living insects should be placed with a supply of the plant on which they are found feeding and the box should have some small holes pierced for the purpose of ventilation. These should be carefully packed in such a way as to prevent their becoming crushed in transit.

If it is desired to preserve specimens they should be put in bottles with tightly fitting corks. Methylated spirits, diluted rum, etc., make excellent preserving fluids.

Scale insects, etc., should be forwarded on the portion of the plant on which they are found.

If in doubt as to the best method of forwarding specimens, a letter should be sent asking for instructions and stating full details.

In all cases full particulars should be forwarded as to the nature and extent of damage done, along with any other important points that may have been noticed.

All specimens should be addressed:—

THE AGRICULTURAL SUPERINTENDENT,
Botanic Gardens,
Castries.

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LETTER OF TRANSMITTAL.

Commissioner of Agriculture to Administrator, St. Lucia.

Lu. 1979.

TRINIDAD,
29th October, 1925.

Sir,

I have the honour to forward herewith the Annual Report of the Agricultural Department of St. Lucia for the year 1924. The Report is prepared by Mr. Walters, Agricultural Superintendent of the Island.

2. The Report indicates much steady work and I may mention particularly the establishment of Alfalfa as a seed producing plant in the Island.

3. The account of the work of the Agricultural Credit Societies is the most unsatisfactory portion and there would appear to be something radically wrong with these Societies. The main reason for their lack of success would appear to be the absence of any co-operative spirit. They are Societies organised merely for the purpose of borrowing and they accept no liabilities from their members ; consequently there is little reason why members should take personal interest to see that loans are properly expended. In cases of Societies like these the security is not readily realisable by the agent making the advances, foreclosure is therefore a difficult matter and prosecution so improbable that the Societies can to a very large degree repudiate their liabilities without risk to the individual members. It would appear that the whole system requires to be reviewed if the Societies are to serve a useful purpose.

I have, etc.,

(Sgd.) H. M. LEAKE,
Commissioner of Agriculture
for the West Indies.

His Honour
The Administrator.

STAFF OF THE AGRICULTURAL DEPARTMENT, ST. LUCIA.

E. A. Walters, F.R.H.S., F.R. Met. Soc. ..	Agricultural Superintendent and Land Officer.
R. W. Niles	Overseer and Agricultural Officer, Inspector Agricultural Credit Societies.
E. B. Smith	Foreman and Agricultural Instructor, Reunion.
B. Joshua	Junior Agricultural Assistant.
W. W. Arno	Clerk to Agricultural Superintendent.
A. M. Y. Warrican	Clerk, Government Lime Juice Factory.

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SAINT LUCIA.

Report on the Agricultural Department for the year ended December 31, 1924.

WORK IN THE BOTANIC GARDENS CASTRIES, AND OBSERVATIONS ON PLANTS.

The ornamental grounds of the Botanic Gardens were maintained in fair condition throughout the year, continuous work was necessary in draining and lifting the lower parts of the Gardens owing to gradual sinking of the artificial soil which covers this reclaimed area, formerly a tidal swamp.

Large scale operations commenced included the removal of the large and unsightly hedge of *Pandanus sp.* twenty-five feet in height and breadth and one hundred yards long which has provided a safe retreat for venomous centipedes, rats and crabs during the last ten years.

This mass of material was cut up and placed on a subsiding border the whole levelled and covered with coral dredgings and leaf-mould from the Bay Factory, and surfaced with good soil; when sinking has ceased lawn grass will be planted to form a grass border.

In this area a veteran tree of *Cananga odorata* Hook J. (Ylang-Ylang) has finally succumbed to the effects of salt solution and crab attack on the roots.

A good specimen of Logwood (*Haematoxylon campechianum* L.) twenty-five years of age was blown down during heavy winds, when cut up it yielded seventeen and a half hundred-weights of logwood and one cord of firewood.

The construction of two Public Lawn Tennis Courts is now in progress, this absorbs a portion of the north-western lawn and provision is being made for suitable foliage and ornamental trees to brighten this part of the Gardens at the same time providing shade from the western sun which would otherwise render play difficult.

More work is necessary on the roads owing to heavy traffic caused by the above operations, this forms part of a future programme.

Good work has been done in the nursery, large numbers of ornamental plants having been propagated for distribution and loaned to public bodies for decorative display in which the Agricultural Officer invariably assists.

Rigid economy has to be maintained throughout the Department owing to retrenchment and restoration of financial stability in the Colony so that further advance in the ornamental section will be necessarily restricted.

AGRICULTURAL EXPERIMENT STATION REUNION.

Plant and Seed Importation.

The following economic plants have been introduced:—

Melinis minutiflora Beauv from the Director of Agriculture, Trinidad; *Cinchona officinalis* L. (Quinine) from the Department of Agriculture, Ceylon; *Mimusops sp.* "*Baku*" from the Royal Botanic Gardens, Kew, through the Imperial Department of Agriculture; *Arachis hypogaea* L. from the Director of Agriculture, The Gambia, and *Pentadesma butyracea* Sabine from the Botanic Gardens, Dominica.

Seed and Plant Exchange—Foreign and Local.

Plants were sent to the Imperial Department of Tropical Agriculture and to various planters and Public Institutions in the Colony.

WORK AT THE EXPERIMENT STATION.

Interest in lime production has been maintained and other economic plants have shared a tendency to revival in trade and firmer markets; large numbers of seedling limes about six months old have been sold at one shilling per hundred for early planting.

Fruit production such as choice mangoes, oranges, grape-fruit and avocado pears has received considerable attention, sufficient orders being placed to occupy the propagators for six months, this is probably largely due to increased tourists and a more discriminating taste.

As several inquiries as to the method of propagating mangoes have been received a short description here may be useful to those unacquainted with grafting methods:—

A rooted seedling of the common mango about six months old and half an inch in stem diameter grown in a bamboo pot is approached to a branch of an established tree of the desired variety, each opposing surface is cut removing the outer layer (bark and cambium), flat surfaces being formed about three inches long, these are closely fitted and bound together with waxed tape care being taken to keep the parts rigid by staking firmly, the top of the seedling above the site of union is then cleanly cut away. Cambium forms on the opposing surfaces and unites the seedling and stock within eight weeks, the branch is then carefully severed and the resulting plant placed in light shade until union is firmly effected and the plant growing well; large branches should not be grafted on small stock as the heavy top will bend over or may break away during heavy winds.

Plant Distribution

The following table shows the distribution of plants, seeds, and cuttings from the Department during 1924:—

Plants—Economic	(number.)
Limes (seedling)	3,920
Oranges (budded)	262
Grapefruit (budded)	36
Mangoes (grafted)	77
Pineapples (plants)	272
Dolichos hosei (clumps)	54
Melinis minutiflora (clumps) ...	24
Soudan grass (clumps)	40
Various economics	127
Total	4,812
Seeds—Economic	
Horse beans	44 lbs.
Peanuts	23 ,,
Onion seed	2 ,,
Cotton seed (Sea Island)	2 ,,
Vegetable seed	28 packets.
Cuttings—Economic (number)	2,425
Plants—Ornamental	(number.)
Miscellaneous	205
Cuttings (bundles)	7

NOTES ON PLOTS AT THE AGRICULTURAL EXPERIMENT STATION, REUNION.

Sugar Cane. The seedling canes from BA 6032 and B 6450 are now well established in the varietal double rows formed from cuttings taken from the original stools during July, 1923; these varieties show wide divergence in colour, habit, vitality and disease resistance, BA 6032 varieties are the most promising, few of B 6450 appear to be suitable and the majority of these will be destroyed if further examination shews them unfit for cultivation.

The two Bourbon seedlings which germinated were weak and chlorotic and finally succumbed through lack of vitality.

A number of the canes show considerable *chlorosis*, a mottling effect due to absence of green colouring matter (chlorophyll), examples of this can be seen on canes growing under unsuitable conditions or weak types in practically every cane field in St. Lucia and should

not be confused with Mosaic disease of cane where the central unfolding leaf is affected and the mottling, which is more pronounced increases with age and seriously reduces vitality and yield.

The following varieties appear worth testing :—

Parents.	Habit.	Colour.	Plants obtained from one stool, i.e. vitality.
BA 6032.			
Cane variety No. S 4a/21	Tall, erect, tends to split; cane=1¼" diameter.	Yellow-red, similar to D 116.	100
S 6/21	Average height, splits; 1" diameter.	Blue & russet, similar to Bl. Tanna.	40
S 6a/21	Average height, joints in pairs, non-splitting 1½" diameter.	Blue & russet, as Bl. Tanna.	78
S 9/21	Straggling, large cane; 2½" to 2¾" diameter.	Yellow, slightly blue, Bourbon type.	40
S 10/21	Erect, full stool, 1½" diam.	Yellow & purple.	88
S 13/21	Erect, good stool 5 ft.; long internodes 2" diameter.	Pale yellow, 6032 & Bourbon strain.	14
S 14/21	Erect, fair stool 5 ft., 2" diameter.	Green & yellow.	112
S 16/21	Erect, 7 ft. good stool, long internodes 1¼" diameter.	Light yellow-brown markings, similar to Uba.	104
S 16a/21	As 16/21. Not erect, stouter and good stool.	Light yellow brown, similar to Uba.	119
S 21/21	Erect, good stool 7 ft. joints in pairs, 1⅛" diam.	Rose & Yellow.	93

Parents.	Habit.	Colour.	Plants obtained from one stool i. e. vitality.
B 6450.			
Cane variety No. S 33/21	Erect, full stool 1" diam.	Light green & yellow.	64
S 34/21	Semi-erect, 5 ft. 1" diam.	Rose-yellow, red markings.	64
S 41/21	Semi-erect. 6 ft. nodes bulbose, 1" diameter. (some cane-borer).	Yellow-dark brown with blue.	61

The remaining progeny appear worthless for commercial sugar growing, some few developed a small cane with large amounts of foliage and may possibly be useful for fodder in dry season or areas; others are dwarfed and decidedly grass-like shewing reversion to the primitive cane plant (atavism); these will be destroyed.

Other varieties of cane at Reunion.—

During the present writer's period of office additions have been made to the collection of current useful varieties of cane at the Experiment Station, this now consists of the following :—

B H 10 (12)	Striped cane
B A 6032	Bourbon
B 6450	Uba.
B A 11569	
B 208	
No. 375	
B 147	
No. 6388	
No. 156	

These varieties will replace the common cane formerly grown to produce a small revenue by making syrup, and planters will thus be able to contrast the varieties side by side and obtain cuttings for restocking or replacing their present types.

Uba Cane.

Owing to the possibility of Mosaic disease invasion by illicit introduction of cane in spite of rigid quarantine, or of grass plants bearing the Mosaic virus, it was considered advisable to organise nurseries of the Mosaic resistant Uba cane in important cane areas ; large numbers of cuttings of this variety have accordingly been introduced and after inspection and treatment have been established in certain areas, at present this cane being drought resistant is used for hill-side planting and as cattle food. This type of cane derived from India produces a large amount of foliage on a thin stem and it should be placed at wider intervals than current varieties, to allow proper ripening by admitting sun and air, (at 5 feet by 5 feet or 5 feet by 6 feet).

The tonnage and sugar production per acre is compared below with the production of popular varieties in St. Lucia :—

Variety.	Tons of cane per acre.	Tons of sugar per acre.
Uba	49.10 (1) ...	5.0 (1)
B H 10 (12) ..	30.80 (4) ...	2.0 (4)
B 208 ...	49.43 (3) ...	3.0 (3)
B A 6032 ...	19.20 (4) ...	1.5 (4)
B 147 ...	29.76 (3)	3.2 (3)
Rappoe ...	24.00 (4) ...	2.4 (4)
Java unknown ...	55.50 (1)	5.3 (1)

Uba cane contains a rather high proportion of colloids (gums, proteids, waxes, tannins) rendering clarification of syrup and manufacture of bright crystals more difficult than usual, it is therefore not attractive from the manufacturer's point of view, its leaves and trash adhere tightly to the cane—a further objection.

Java unknown, closely related to Uba is an advance on this in some respects, its tonnage and sugar yield per acre is higher, and the leaves strip readily.

Both canes being Mosaic disease resistant should prove useful for future breeding work towards combining this advantage with improved manufacturing qualities.

Bay Trees. (*Pimenta acris*).

The four varieties of Bay trees received normal cultivation consisting of one digging and two green mulches of Horse beans (*Canavalia ensiformis* DC.), the following crop of leaves was collected as against that of the previous year :—

Year.	Variety.	No. of trees.	Total weight. leaves (lbs.)	Average 1 tree (lbs.)	Yield—per cent. ‡
1923	Trinidad	12	340	28·3	56·6
1924	,,	11	426	38·0	77·4
1923.	Dominica	12	540	45·0	90·0
1924	,,	12	676·5	56·4	112·8
1923	Montserrat	13	428	33·0	65·8
1924	,,	13	610	47 0	94·0
1923	St. Lucia	11	224	20·3	40·6
1924	,,	11	264·5	24·0	48 0

‡ Yield per cent 100=50 lbs. leaves per tree per annum.

Although experimental plots below a certain size may give rise to a wide margin of experimental error owing to "chance" differences, analysis of the above table indicates

(1) Agricultural Notes, Porto Rico "A comparison of Java unknown with Uba cane."
(3) W. I. Bulletin Vol. 6, No. 1. "Sugar Experiments in Jamaica."
(4) Estimates obtained locally.

that considerable improvement can be effected in leaf production by cultivation and pruning and the use of the more foliaceous varieties of Bay, particularly the Dominica variety, even over a short period.

An effort is being made to interest local producers of Bay oil and Bay rum in maintaining and improving their production by the cultivation of best varieties of seedlings; this industry has prospered during the present year (Bay rum exports alone were valued at £2,498) due largely to the Bay tree still existing within economic collecting areas, this position, however, cannot long survive owing to careless plucking of leaf-crops and entire destruction of young trees for "Pimento" walking-sticks, provision should be made to replace these losses.

Coconuts.

The common tall variety has fruited fairly well, the nuts forming the first crop are only medium in size but the general condition of the trees indicates good crops ahead.

These trees are now seven to nine years old, growing on gravelly soil with a heavy subsoil overlying rock, good drainage and cover crops are essential to maintain aeration and fertility; coconuts do not grow well in unaerated land holding stagnant water, but thrive where water is in constant movement such as hillsides, sea-coasts, well drained valleys and the banks of streams.

These coconuts provide an object lesson to those who maintain that coconuts may be planted and left to take care of themselves for the first three or four years, and accordingly plant up areas of coconuts over coarse bush land without drainage or tillage, with the result that stunted trees with small bases and insecure anchorage struggle up through the bush only to be subject to aridity and semi-starvation; such trees cannot form large trunks owing to restricted bases and the general character of palms and grasses (Monocotyledons) where the absence of a cambium ring and true bark restricts expansion and increase in girth (as occurs at all ages in the common forest trees—Dicotyledons) unless this is provided for at early development.

In contrast to such palms, those at Reunion possess large bases firmly anchored in the soil able to resist heavy winds and drought and to form good crowns well provided with foliage, this is due to moderate attention being given to digging, intercropping and mulching when young.

Dwarf Coconuts. The recent importation of three varieties of seed Dwarf nuts "Nyiur gading" from the Federated Malay States resulted in some disappointment to purchasers owing to low germination results, and although more inquiries for these varieties have been received further importations have been discouraged until improved and economic methods of transport are available.

The established dwarf nuts have made good progress although a check was evident early in 1924, mainly due to drought on insufficient root spread in some of the plants; this was remedied by drainage, opening up the soil and the application of green-mulches; kelp when available has been incorporated in the soil.

A chocolate-brown discolouration of the rachis of one palm similar to that produced by Phytophthora rot has been controlled by careful pruning and applications of common salt to the crown.

Limes. The common lime plot has reacted to good cultivation the trees being now in excellent health and fruiting heavily, accounts of crop yields are being kept.

Enquiries have been received as to economic possibilities of irrigating limes on dry areas or in dry seasons and now that this plot is in good condition information may be obtained by laying out the plot under natural and artificial water supply.

Owing to more important duties no further work was possible on the Spineless limes beyond improving the trees by digging, mulching and pruning; the progeny of the common lime and spineless lime * was weak and did not long survive.

Pineapples. The pineapple plot has supplied three hundred plants (Black Antigua) to planters interested in this fruit, in addition to restocking vacancies in the Station.

A discolouration of the leaves has been observed at Reunion which appears to be due to insufficient areation of the soil and lack of humus, and was remedied by removal to fresh open soil containing humus; the plants thus treated have now regained a good colour and are growing well.

Black Antigua appears to be identical with Black Ripley pine and produces two fruits per plant annually after the first year, weighing on the average about 5 lbs. each.

Other commercial varieties which it is hoped to establish are:—

Red Spanish	...	Qualities—Hardy, firm fruit, popular in American markets.
Cabezona	...	Large, heavy yielder, suitable for canning.
Smooth Cayenne	...	Fine quality, sweet pine,
Sugar loaf	...	Large, resistant to disease, as fresh fruit.

* See Annual Report 1923.

Excellent pines are grown locally and sufficient areas are available to grow pineapples for export in crates as fresh fruit, in addition to an increasing local demand; enquiries are being made as to a suitable form of crate.

The establishment of a canning industry appears to demand more organisation than can be effected locally at present.

The following costs give the approximate expenditure on planting and maintaining one acre of coastal land in pineapples for one year in St. Lucia :—

To/	£	s.	d.			
Cleaning low bush and weeds	1	1	4			
Digging	1	9	2			
Lining	1	15	0			
Weeding	2	12	6			
Miscellaneous	1	6	0			
Total . ..				£8	4	0
2,900 plants @ 4 feet x 3 feet @ 1d. (1st year only)	12	1	8	12	1	8
Total				£20	5	8

Manures for the second year will be necessary.

In an experimental area of about one acre containing pines under the Department of Agriculture, Jamaica, the pine crop (Sugar-loaf) realised £65. (1).

BANANAS. A short account is attached of work on bananas which led to the adoption of the "section" system of planting on a large scale which is now used locally.

The Canary banana (*Musa Carendishii;* Paxt.) is known locally as the Short, Dwarf or Chinese Fig or Governor banana and is found in most small, and in all large plantations, it seems to be very resistant to diseases and pests and survives neglect.

A plot of this species previously formed at Reunion was found to need replanting, the plants being out of line and insecurely rooted owing to roots having formed mostly near the surface, as occurs when this type of banana remains undisturbed in one site for several years, and in this and other commercial bananas the presence of the banana weevil and formation of galleries in the rhizome obstructs the passage of food supplies and causes destruction of roots, with the result that the plants fall down when endeavouring to carry a heavy bunch.

The stools were dug out, soaked in water for forty-eight hours to drive out banana weevils and then made into "sections" for planting, the large stem being cut across low down in order to remove the bud or central growing point, the round bulb thus formed being then cut down through the centre and each half if sufficiently large, again divided into two pieces or "sections"; each section was thus provided with a number of good buds and ample food reserve.

The sections were planted in October, 1923, and within fourteen months had developed a good stand of central fruiting stem with large and small suckers.

A similar experiment was carried out with *Musa sapientum* variety *Macabou*—bull-heads of eight to twelve inches diameter were cut into two, three or four sections, the roots pared off and the sections planted.

Sword and maiden suckers as used locally for planting were also planted at the same time under fair conditions of competition;—result—Plants developed from the sections more numerously than from suckers, slower at first then more rapidly, no dying back occurred as happened in the suckers; finally the sections fruited earlier and with a better stand.

These suggestive results gave sufficient basis for advising a similar treatment of the variety *Gros Michel,* plants of which were not available for experiment, the great advantage with these being, that all plants could be cut open and carefully examined for symptoms of Panama Disease and weevil infestation; at the same time the method was sufficiently practical to be carried out on a commercial scale; it has resulted in assisting and regulating rapid and uniform growth of first year plants in the field, practically free from Panama Disease and weevil; further information on this work appears under "Control of Fungus Diseases" and "New Industries—Banana Cultivation."

Plants of the Giant Fig of St. Lucia or variety *Bout Rond* were planted on the site of Gros Michel which had succumbed to Panama disease, these plants remained quite healthy; this variety which has so far resisted all attempts at infection and inoculation cannot be exported commercially under present packing methods owing to weakness in the fruit, the rind of the fruit peels and splits readily and few bunches arrive at their destination in a marketable condition.

(1) Pines, Tropical Agriculture Vol. 1. No. 12, 1924.

Important work is being done by the Imperial College of Tropical Agriculture in breeding experiments aiming at combining a marketable fruit with disease-resistant properties.

Castor Oil.

This crop has assumed importance owing to the establishment and successful working of a Castor-oil Factory locally, the price paid—2d. per lb. of seed freed from the outer shell—does not appear to be sufficient inducement to small planters to plant up with a crop which cannot be eaten; consignments of seed have been imported for oil extraction, this appears anomalous when one considers the extensive areas of land subject to aridity and at present in bush or coarse grasses, which would, with very little care continue to grow the castor plant when once well established.

The solution would appear to be greater seed production per plant and a commencement on this has been made by collecting and planting varieties of castor seed and recording the yields.

The following varieties have been used:—

Trinidad varieties,
Antiguan varieties,
St. Lucia native and Reunion seed.

Germination of the varieties was fairly regular, some plants only attained a foot in height then flowered, ripened a few seeds and died, thus forming an *annual* habit.

Others have grown into bushes of fifteen feet in height and breadth, are amenable to pruning and are *perennial*, ripening several crops of seed before dying down.

Over one hundred forms were observed of which fifty-three lived and were recorded, the seed weights vary extremely both in individual seed and in total yield, oil content by weight varies but slightly - from forty-three per cent. to forty-nine per cent. yield of oil (oil as ether extract).

The best varieties were:—

Name.	Yield=per cent. of 500 grams of seed per annum.	Seed weight in grams.
L.1.	158.	15.
L.24.	116.	18.
L.7.	113.	19.
L.15.	113.	17.
T.14.	112.	17.
L.8.	104.	20.
T.7.	99.	17.

The best varieties will be propagated and seed distributed so that a distinct strain high in seed and oil yields and perennial in habit may displace the weed-like and temporary forms occurring in castor plantations to-day which have given rise to losses and disappointment.

An important point to be observed is that the large seeded forms do not give more oil per tree owing to fewer seeds being carried, the oil content for these being about 47 per cent. by weight.

Castor seeds should be sown during the rains and should have boiling water poured over them before sowing in order to crack the testa and assist germination, the seeds may otherwise remain in the soil up to six months before germinating.

FODDER PLANTS.

Alfalfa.

Plots of Medanos and Saviniza, (Alfalfa), *Medicago sativa L.*, established in 1917 were found to be in poor condition in February, 1923, due to neglected cultivation and drought, nodule development was poor.

The plots were weeded, forked and given applications of lime and wood-ash,—these fertilisers are soil amendments and promote formation of nodules and are particularly suited to most leguminous plants; on the other hand nitrogenous manures discourage nodule formation and result in a decrease in crop growth and yield of legumes.

The plots were re-examined in September and the plants found to be fairly well supplied with nodules and flowering and seeding well.

In the following year nodule development advanced remarkably, the plants grew bushy and reached a height of 3 feet; seed was collected and sown in boxes of soil taken from the plots; germination was excellent and the plants developed good nodules; the plants were subsequently planted out in an entirely new site which was prepared by inoculating the soil with alfalfa mud watered in, and are now well established; the yields of fodder will be recorded.

Dolichos hosei. Craib.

This useful green manure has been in constant demand for planting in coconut and lime plantations as a weed preventer, soil fertiliser and mulch; when once established by planting clumps in a cleared place it thrives and spreads without further assistance beyond cutlassing down the strongest weeds during initial stages, when well established it forms good cattle grazing if intervals of rest are allowed for recovering growth.

The plot of Dolichos at the Experiment Station has, during the year, extended throughout the whole of the lower half of the Station both in tilled land and in grass; this unprecendented spread cannot be accounted for by human agency or wind currents and it is probable that the seed pods have been carried by birds particularly Doves, Grass Sparrows (See-see Zerbe) and the Black-bird (*Holoquiscalus inflexirostris*), the latter although insectivorous will in times of famine partake of a vegetable diet,—or the seeds be carried on the feet of foraging birds.

The conservation of these and other birds has important bearing on successfully establishing this green mulch, which is particularly necessary on bare hill-slopes recently cleared of forest and about to grow crops of noxious weeds.

Horse Beans. (*Canavalia ensiformis*).

This green mulch is readily established and is an economical weed destroyer in addition to the fertilising effect derived from the nitrogen released when nodules decay in the soil, nodules half an inch in diameter are formed at Reunion.

The beans contain a toxic principle *hydrocyanic acid* which is destroyed by heat, and the beans when cooked form a useful cattle food as does the green foliage in the raw state.

Anti-Tick Grass. (*Melinis minutiflora*).

Large quantities of this grass have been supplied for forming cattle pastures, it is readily established and gives a high return of fodder on dry lands, it is also known as Seymour and Molasses grass and has been stated to be unsuccessful at elevations below 1,000 feet—no difficulty on this head has been experienced locally.

Elephant grass, Soudan grass and Sweet Sorghum have been established and plants distributed, the two latter food plants contain perceptible amounts of *hydrocyanic acid* particularly in the leaves, this disappears if the grass is allowed to wilt.

FOREST CONSERVATION.

The total area of St. Lucia is 152,320 acres of which one-ninth is under cultivation, land under proprietary rights amounts to over 77,400 acres, the residue, roughly 74,800 acres comprises the undeveloped assets of the Colony, of this one-third is suitable for agricultural production, the remainder includes precipitous hill-sides and impassable ravines; this area is at present mainly under forest, the best forest trees have, however, been removed, no system of planting having replaced the felled timber and secondary forest growth now largely substitutes original forest.

This area also forms the central water-shed and rainfall and humidity is largely encouraged and conserved by the existence of the forest-clothing at considerable elevations.

An increase in the forest products exported is shown by the following figures :—

Exported.	Forest timbers and firewood. C. ft.	Shingles Number.	Charcoal lb.
1914	175,484	7,000,000	...
1922	319,522	22,500	378,560
1924	243,037	2,900	1,157,370

—no addition is here made for local consumption.

This shows that the forest reserves are being largely drawn upon and are not replaced by afforestation and rarely by cultivated land.

It will be necessary to check this deforestation until collection and replanting of selected forest trees replaces the total loss due to indiscriminate felling, a workable method would be the imposition of a tax on all trees felled for timber, charcoal, etc., the proceeds of this tax to finance systematic care and conservation of the forest.

Attention is also drawn to the necessity for retaining crowns of trees on ridges throughout all cultivated areas, to encourage rainfall and prevent erosion, where such belts are absent arid conditions invariably obtain; factories requiring large amounts of fuel usually obtain this by clearing wooded land near the cultivation, this can be continued by making a five year rotation of cleared blocks so that the land is never entirely denuded, trees and bushes in general should not be cut lower than about three feet above ground, the stumps then bud out and form ratoon growth.

GENERAL REMARKS ON THE EXPERIMENT STATION.

The upper area of the Station is now being closed in by wind-breaks the most successful trees for this purpose being *Casuarina spp.*, *Gliricidia maculata*, Mango, and West Indian Cedar (*Cedrela odorata*), this area is now being used for experimental work and demonstration plots of varieties of cane and of other economic plants, the common cane crop being discontinued for more useful work; the crop made during the year was twelve casks of syrup as against three casks of the previous year.

Considerable alterations made in the larger seed-house now permit the opening of all glazed sides allowing a free passage of air and coolness to be maintained.

The sugar factory has been kept in fair repair, this is a large structure built in the early days of sugar prosperity and needs entire reconditioning on up-to-date lines, the annual repairs make a drain on the Department's Votes and yet are insufficient to restore wastage; as no use will apparently be found for the whole building and plant, the surplus plant might be disposed of and a smaller and more suitable structure erected.

CONTROL OF INSECT PESTS.

No large outbreak of any insect pest occurred during the year, the following pests appeared and were controlled by artificial or natural means :—

Coconuts. Coconut White Fly (*Aleyrodicus cocois;* Curtis.) was found on coconut palms generally throughout the Colony during the drier months February to May together with Mealy Bug (*Pseudococcus nipeae;* Mack.) and slight infestations of the Star Scale (*Vinsonia stellifera;* Westw.); these attacks occurred on the fully developed leaves mainly in exposed palm groves and resulted in the lower leaves losing their natural green colour and becoming yellow and brown, somewhat similar in appearance to symptoms of Red Ring.

With a change of weather and increased humidity entomogenous fungi successfully parasitized and reduced the scale and fly infestations; the most useful fungi being—the Black scale fungus *Myriangium Durioei*, the Shield-scale fungus—*Cephalosporium Lecanii*, and the Red-headed fungus—*Sphaerostilbe coccophila.*

The Spotted Lady-bird, *Megilla maculata;* D.G. and the Red Lady-bird, *Cycloneda sanguinea;* L, reduced insect pests in general, hyper-parasites largely controlled scale insects also as was shown by the large numbers of dead scales with emergence holes.

In one case of plant lice on young palms it was found necessary to wash and spray with whale-oil soap.

A few palms were attacked by the Striped weevil borer, *Metamasius sericeus:* Oliv., the palms were destroyed and the decayed palm stumps near by which had formed a breeding ground were burned.

No cases of Red Ring disease of coconuts have appeared.

Bananas.

The Banana weevil *Cosmopolites sordidus*; Germ., a short black weevil with a curved beak (rostrum) has a wide distribution throughout the Colony inhabiting all kinds of banana plants and rendering these sickly and liable to decay owing to the extensive galleries formed in the rhizomes.

Considerable numbers of banana stools were treated by digging out and chopping up into small pieces; although this weevil can resist long immersion in water or even in lime water, it can be driven out by soaking the planting material for forty-eight hours, the escaping weevils should be destroyed.

There is no proof that this pest is increasing but owing to a more thorough examination through neglected gardens larger numbers are now being found.

The Banana borer *Tomarus bituberculatus*; Beaud., a large black beetle is also found in most banana gardens, it is encouraged by neglected cultivation particularly of tanias and similar root-storage crops, these should be cleaned out where bananas are planted.

The importation of the large ground lizard *Meiva dorsalis* from Montserrat has not been continued, this creature would be useful in controlling insect pests if enabled to establish itself among local fauna, this has been impossible owing to the predatory mongoose to which the imported lizards were probably unaccustomed and were destroyed before being able to form a defensive habit.

A better control is to be obtained by encouraging the spread of insectivorous birds e.g., kiskadees, flycatchers, swallows, hawks and owls; indiscriminate snaring of birds for food is still much too common.

Limes.

Infestations of Snow scale, *Chionaspis citri*; Const., appeared in exposed plantations but were fairly well controlled by the Black fungus.

SUGAR.

The brown Hard-back *Phytalus sp*; occurs in most cane plantations, for these the best control has been clean cultivation.

An infestation of caterpillars on cane leaves was reported on one sugar estate, this was controlled by collecting the larvae and by using one part Paris green and four parts lime mixed and dusted over the leaves.

COTTON.

The Cotton worm, *Alabama argillacea*; Hubn., destroying cotton foliage was controlled by hand picking and Paris green and lime.

CONTROL OF FUNGUS DISEASES.

BANANAS.

The most extensive work under this head was the survey of Panama disease.

This disease which is particularly fatal to the Gros Michel occurred in the banana nurseries in January, 1924, the earliest symptoms being wilting and yellowing of the leaves and breaking down of the leaf stalk, internally the vascular system becomes spotted with yellow and reddish spots which are seen as coloured threads travelling up the trunk when cut longitudinally.

Specimens were sent to the Imperial Department and were pronounced characteristic of Panama disease.

Professor Ashby, the Mycologist and banana specialist attached to the Imperial Department of Tropical Agriculture was invited by the Government to examine banana prospects and particularly the occurrence of Panama disease, a programme was arranged and with the Agricultural Superintendent a tour of eleven days was made throughout the Colony during which banana and coconut plantations and cane-fields were visited; demonstrations and talks with planters on banana diseases and planting methods were held in several towns including a meeting of the Agricultural and Commercial Society in Castries.

The origin of Panama disease in the banana cultivation was traced to infected suckers included in the large number of plants bought from scattered plantations; these on being planted up showed distinct infection when about ten months old; the diseased plants were destroyed by fire, the surrounding plants were cut down and the area fenced off and allowed to grow in bush.

During the tour attention was given to Fig Bout Rond, the St. Lucia Giant Fig, found growing in areas where the Gros Michel had died out owing to Panama disease, this resistant variety has not yet been successful in shipping tests.

The section system of planting was found to be successful in reducing Panama disease infection and also banana weevil attack to a very low figure, this system is now being extended to all new plantations where the Department's co-operation is required.

At the end of 1924 the area in new banana cultivation was close upon 1,000 acres mainly in Gros Michel planted up by a private Company, fruiting prospects were good, eight to nine hand bunches forming the greatest proportion and preparations were being made for trial shipments of fruit.

An extensive system of roads have been developed by this Company joining what was originally the nursery to more land and estates recently acquiried at the head of the Roseau valley.

This industry should receive full local support and it will be to the planters advantage to co-operate with the Company in contracting for fruit supplies, and so help to establish what is already a minor industry and should in a few years form a chief industry of the Colony.

Co-operation is also required with the Department and surveys for suitable land, methods of selection of plants and planting and disease control can be arranged with prospective banana planters who should consult the Department before planting.

Disease spots will inevitably appear on land planted with material collected indiscriminately, once this happens such cultivation in a short time becomes unprofitable.

It seems probable that most of the coastal area will prove to be infected with Panama disease due to past or recent planting with infected material brought in, originally from overseas; the best lands practically free from disease are the higher areas and virgin forest lands, it would be the height of folly to plant these lands with bananas from the old and established estates and coastal areas, in which with few exceptions Panama disease is present.

The only safe method is by sections examined and passed as disease free, planted on uninfected land.

It is of the utmost importance that both sections and planting area should be examined for disease.

Coconuts.

The Mycologist inspected some cases of what appeared to be Phytophthora budrot on coconuts, and advised that the upper part of the diseased palms should be destroyed by fire, this was done.

Palm groves occasionally contain vacant areas where palms have died out in the past, probably from some form of budrot, the adjacent palms should be carefully watched for any reappearance of this disease.

Cases of Little-leaf disease of coconuts were found in several plantations, the symptoms being dwarfing, distortion and charring of the young leaves, the trunks of the palms shewed constrictions due to the debility caused by food shortage; palms in a favourable environment frequently out-grow such an attack particularly if aided by improved drainage and manuring, others if neglected succumb to a secondary budrot following the primary disease.

In addition to improving cultivation, opening of the heart leaves and drenching with tobacco extract or diluted jeyes fluid was advised, the worst cases were destroyed by fire.

Sugar-Cane.

No Mosaic disease of sugar cane has yet appeared locally, this is no doubt largely due to strict examination and treatment or destruction of all plants introduced into the Colony, no evasion of this quarantine should be attempted when introducing plants.

A spotting of cane leaves is frequently mistaken for Mosaic disease, this effect however, is produced by unfavourable cultivation, drought, etc., and is found mostly on the older leaves, whereas Mosaic occurs in the unrolling bud.

Root-disease has been present to some extent following on checks to growth induced by drought conditions in 1923, the control for this being destruction by burning of affected cane stools, liming the area and improving the drainage, varieties subject to root-disease should be discarded for more useful forms.

Limes.

No dangerous disease occurred during the year and Wither-tip of limes has so far been successfully excluded by quarantine.

Dieback of lime branches due to unsuitable soil conditions and defective wind-breaks is to be found on many estates, these conditions should be remedied and pruning and mulching practised so as to increase the vitality of affected trees.

Cacao.

Rosellinia pepo Pat., the cause of a root disease once prevalent on some estates has been restricted by burning all infected roots and isolating the spots by deep trenching.

Black pod-rot caused by *Phytophthora faberi*, Maubl., occurs in most cacao estates during prolonged wet weather; infection was fairly severe on one estate of high rainfall, treatment consisted of collecting and burning infected pods and broken branches.

PLANT QUARANTINE.

The Plants Protection Ordinance requires that all imported seeds, plants and planting material of any kind must be delivered to the Agricultural Department upon arrival, the necessary inspection and treatment will then be made; such treatment does not injure planting material as is supposed by some importers, destruction is necessary in dangerously infected material and prohibited cases only.

Under this Ordinance 43 consignments were examined and treated.

Proclamations in force under the Ordinance.

The Government may prohibit the importation of any planting material which may be the means of introducing a dangerous disease or pest.

The following prohibitions are in force:—

Coconuts.

(1) Coconuts, coconut plants or any part thereof from all places, except under Licence.

Bananas.

(2) Banana plants or any parts thereof that may have come directly or indirectly from Trinidad, Tobago, Grenada, Central and South America.

Cacao.

(3) Cacao plants from South America.

Citrus (Orange, Grapefruit, Limes, etc.)

(4) All Citrus plants from the United States of America, Cuba, Porto Rico, Jamaica, Hayti, or San Domingo.

(5) All Citrus plants from British Guiana, Trinidad, Dominica and Greater Antilles.

(6) Citrus, Coffee, Mango, Guava, Sapodilla, and Star Apple plants from Bahama Islands, Ceylon, Cuba, India, Jamaica and Philippine Islands.

(7) No rooted plants in earth may be imported from any of the places mentioned in (4) and (6) unless they are accompanied by a certificate from the proper authority in the country in question certifying that citrus canker does not exists, and has not existed within two years in the district from whence the plants are exported.

Importers should instruct the exporting firm to forward the necessary certificate in advance of the plants.

COTTON.

(8) Cotton seed and all parts of the cotton plant are entirely prohibited except under licence, and subject to heat or fumigation treatment.

SUGAR-CANE, ETC.

(9) Sugar-cane plants, grasses, sweet corn and sorghum or any parts or fodders that may have come directly or indirectly from any place beyond the limits of this Colony.

This includes all grass-like plants viz :—Sugar-cane, sorghum, corn, guinea grass, millet, maize, oats, barley, rye, rice, Job's tears, bamboo, etc.

EXPORTATION OF PLANT MATERIAL.

Exporters intending to ship plants, seeds, fruits etc., overseas should communicate with the Agricultural Superintendent in order to obtain information on Quarantines in overseas ports, and avoid the possibility of confiscation or the refusal to accept goods in shipment when these are prohibited or are not accompanied by the necessary certificate of freedom from disease and place of origin.

Diseases and Pests within the Colony.

Under the Ordinance the existence of diseases and pests must be notified to the Agricultural Department or to an Inspector or Police Officer for transmission to the Agricultural Superintendent.

Under the Plants Protection Ordinance Panama disease, Marasmius, Banana Weevil and Borer are declared diseases and pests respectively ; Agricultural Officers may enforce sanitary measures for the control of diseases and pests, and treatment was carried out on the following cases :—

COCONUTS.

Some cases of Budrot and Little-leaf disease were treated by burning.

BANANAS.

Banana plants infested with Banana Weevil and Borer were dug up and chopped into small pieces.

Banana plants infected with Panama disease were scorched by burning trash around the base, the entire plants were dug up chopped into small pieces and thoroughly charred by fire, the soil was then returned to the hole.

All tools and the feet and hands of the employed persons were disinfected on the spot with 5 per cent. Jeyes Fluid ; the infected area must not be planted with any banana subject to Panama disease.

Importation of Bees.

Under Ordinance No. 18 the importation of any queen-bee, or other bees, bee-hives or parts thereof is prohibited except when accompanied by a certificate approved by the Agricultural Superintendent to the effect that Foul Brood has not existed in the apiary or in connexion therewith.

ANIMAL QUARANTINE.

Under Ordinance No. 17 the Governor in Council may prohibit the importation of any animal, carcase, fodder or litter which may be the means of introducing disease.

Under this Ordinance the importation of animals, fodder or litter from the United Kingdom, Isle of Man and Channel Islands is prohibited.

IDENTIFICATION AND ANALYSIS.

Samples submitted to the Department for examination during the year consisted mainly of specimens of plants, fibres, insect and fungus pests, and vegetable oils.

In addition analysis was made of —

(a) Samples of spent lees (rum distillery),
(b) Samples of calcareous sands,
(c) Bay-oils, Castor-oils, Coconut-oils and Lime-seed oils,
(d) Concentrated lime juice.

(a) Rum distillery exhausted wash was examined for residual alcohol; this was found to be 4·29 per cent Proof spirit; this high value was probably due to leakage in the condenser, to which attention was drawn.

(b) Samples of shell-bearing sands from Vieux-Fort were examined for lime content; the amount of lime present as $CaCO_3$ was 32·91 per cent the remainder consisting of –

	Per cent.
Water	1·5
Organic matter	1·1
Sand (soluble SiO_2) ...	8·2
Sand (insoluble SiO_2) ...	31·8
Iron (FeO_3)	trace
Aluminum	absent
Manganese, Magnesium ...	Not determined

it was advised that the sands could be burnt and used as a soil amendment on heavy soils considerable improvement in tilth and friability has resulted where this has been done.

(c) Bay-oils were examined for Phenol content; average=65 per cent. Phenols; other oils were examined for acid value.

(d) Concentrated lime juice was examined for Citric acid content; average=107·5 ozs. per gallon.

The Kaolin deposit reported on in 1923 has been found useful as a grease remover and polishing agent and as a filtering and bleaching medium.

PROGRESS IN THE CHIEF INDUSTRIES.

SUGAR.

The price of sugar for 1924 shows a decline on the previous year's price, local and weather conditions however were favourable and a good crop was made; the acreage in cane has been increased being now estimated at 4,750 acres, the output shows a considerable advance on returns for recent years.

The following figures show the value and quantities of sugar products exported during 1923 and 1924:—

	1923.	Value, £.	1924.	Value, £.
Factory Sugar (tons) ...	3,147	75,304	3,588	87,987
Muscavado Sugar (tons) ...	136	2,161	497	9,508
Molasses & Syrup (galls) ...	112,368	7,783	459,589	12,323
Total		£85,248		£109,818

It is encouraging to note that the larger sugar estates are keeping in touch with the advance of practical science both in field cultivation and in factory machinery, considerable sums forming a proportion of profits being earmarked annually for improvements in addition to upkeep, such foresight is very necessary owing to increase in competition in the sugar markets, so that estates working with out-of-date machinery and laborious method of cultivation will be unable to produce sufficient crop to cover expenses and provide a margin of profit and so cannot compete with advanced methods of production.

RUM.

The quantity of rum made at the local distilleries was:—

1923	53,338·7 proof gallons.
1924	39,081·0 „ „

Of this only 96 gallons were exported, a large quantity of rum manufactured locally being utilised in Bay rum manufacture, and for local consumption.

CACAO.

Following a period of rock bottom prices an increased demand for cacao brought market prices within reasonable limits, prices rising from 42/- to 65/- per cwt; although a fair crop was made this could have been improved upon had more attention been given to cultivation during low prices.

Increased interest is apparent again on the larger estates owing to somewhat stabilised markets, peasant planters cacao is however, fast disappearing.

About 6,000 acres are at present under cacao.

LIMES.

The increased attention given to the lime trade has already been remarked upon (page 2), and good contracts are being made for supplies of raw juice—this advance is largely due to the failure of lime prospects in other West Indian Islands owing to a disastrous hurricane occurring during August 27th, to 31st; and the occurrence of an equally destructive disease, wither-tip of limes.

The crop was late in ripening and although short owing to dry weather was heavy during the maximum period; the most attractive products were Lime oils,—prices ranging from 5/- to 15/- per lb. for Handpressed lime oil, and from 4/- to 8/- per lb. for Distilled lime oil.

Concentrated lime juice was marketed at from £18 to £22 per pipe.

A considerable increase in area is noted, the present plantations covering 2,550 acres.

The total exported crop calculated in barrels of fruit was :—

1923	...	53,097	barrels.
1924	...	52,238	„

COCONUTS.

An area of 2,550 acres is planted in coconuts the majority of which are established and fruiting well, the groves of young nuts are now coming into bearing and an increase in yield is noted.

Part of the crop was dealt with by the local Oil-mills which exported during the working period—1,081 gallons coconut oil,—3,720 lbs. copra cake.

In addition to considerable local consumption the following products were exported as against the exports for 1923 :—

1923.	Nuts	99,945.	Value	£351.	Copra	206,920 lbs.	Value £2,350.
1924.	„	119,669.	„	£204.	„	202,304 lbs.	„ £2,199.

Prices for the year ranged between £26 and £32 per ton of copra.

An improvement in copra-drying by using the heated flue system has allowed the crop of nuts on one estate to be dealt with in all weathers.

PROGRESS IN MINOR INDUSTRIES.

BAY OIL.

The Bay Oil Distilleries again increased their total production and exported the following amounts, in addition to local consumption :—

4,295 lbs. of Bay oil valued at £1,429 as against
7,551 „ „ valued at £1,601 in 1923, and
13,230 gallons of Bay rum valued at £2,498 as against
8,057 „ „ valued at £2,202 in 1923.

Several parcels of Bay rum in artistic glass containers were exhibited at the British Empire Exhibition, Wembley (1924).

Standardisation of the exported Bay oil has now been made a matter of routine and more satisfactory market prices are been received.

COTTON.

Only a small cotton crop was reaped this year owing to difficulties in obtaining suitable labour, prices have been steady and there is a constant demand for Sea Island cotton, for which considerable planting areas are available in St. Lucia.

BEE-KEEPING.

Increased attention to bee-keeping resulted in higher production, 44,570 lbs. of honey and 483 lbs. of wax being exported; Italian Queen bees have been introduced to improve honey production; more planters should invest in this remunerative minor indnstry.

NEW INDUSTRIES.

BANANA CULTIVATION. (See also page 10.)

The original area of 200 acres forming the nursery in 1923 has been considerably extended by purchases of Crown Lands and estates, including some very fertile areas; owning to the occurrence or Panama disease in the nurseries this area has been thrown out of cultivation.

The forest land when cleared has given excellent results and high grade bunches are usual; care has to be taken to consolidate the steep slopes thrown open when clearing the forest, by establishing mulches and cover crops throughout, these also considerably reduce expenditure on weeding.

To avoid leaf-splitting and consequent food deficiency leading to smaller bunches, wind-breaks are necessary—these are now reserved *in situ* from the natural forest growth.

Banana cultivation elsewhere in the Colony is receiving serious attention and several areas are being laid out for Gros Michel under the supervision of the Department, the Officers of which have been largely employed on this and related work during the year.

Contracts are being made between the Banana Company and large estate owners for supplies of fruit and it is hoped that the contracts will prove sufficiently attractive to induce small holders also to invest in disease-free lands for banana cultivation.

CASTOR OIL.

The Castor Oil and Coconut Oil Factory mentioned as about to be established (the Annual Report for 1923), commenced work during October in the Ground Provision Depôt which was leased by the Government and on being taken over by the Company was made suitable for heavy machinery and storage purposes.

Castor seed, coconuts and lime seeds have been bought by the Company for oil expression, the first parcel of castor oil sold through brokers in the United Kingdom was reported as being of high quality and fetched best price; Coconut oil and cake have been produced and exported, the cake should form a valuable addition to stock foods locally.

Lime seed oil has been expressed, this when clarified forms a useful substitute for cotton seed oil used in cookery, the acrid taste and dark colour can be removed by suitable flocculents, some work on samples submitted to the Department resulted in a perfectly clear and bland product being obtained.

As by-products from oil expression castor-cake and lime seed-cake form valuable manures and should be so utilised locally.

In view of the large and increasing coconut crop of the Colony there should be considerable development of oil expression locally.

EXPORTS FROM ST. LUCIA.

		1924	Value £	1923		Value £
SUGAR PRODUCTS :—						
Sugar, Vacuum Pan ...	Tons	3,588	87,987	Tons	3,147	75,304
,, Muscovado ...	,,	497	9,508	,,	136	2,161
Molasses and Syrup ...	Gall.	159.589	12,323	Gall.	112,368	7.783
Rum	p. Gls.	96	29	p. Gls.	649	64
CACAO PRODUCTS :—						
Cacao	Lbs.	1,362,336	21,267	Lbs.	1,435,478	21,527
LIME PRODUCTS :—						
Concentrated juice ...	Gall.	33,718	7,204	Gall.	32,500	8,060
Raw juice	,,	8,490	589	,,	5,900	467
Distilled lime oil ...	,,	308	762		...	...
Distilled Lime Oil and Essential oil of Limes		...	...	Gall.	1,458	1,743
Essential H. P. oil of limes	,,	1,037	1.578		...	...
Green Limes	Barrels	2,857	2,849	Barrels	5,826	3,479
COCONUT PRODUCTS :—						
Coconuts	Number	119.669	204	Number	99,945	351
Copra	Lbs.	202,304	2,199	Lbs.	206.920	2,350
Coconut-meal ...	,,	3,720	5		...	...
Coconut-oil	Gall.	1,081	162		...	...
HONEY PRODUCTS :—						
Honey	Lbs.	44,570	399	Lbs.	35,510	293
Beeswax	,,	483	14	,,	333	6
COTTON PRODUCTS :—						
Sea Island lint ...	,,	1,537	70	,,	3,052	160
Cotton seed		...	...		...	...

EXPORTS—*(Contd.)*

		1924	Value £	1923		Value £
SPICES :—						
Cinnamon ...	... ,,	105	1		...	...
Ginger ...	... ,,	45	1		...	...
Nutmegs ...	... ,,	8,170	77	,,	3,011	91
Mace ...	... ,,	1,133	104	,,	469	18
Vanilla		...	...		...	...
Kola Nuts ...	... ,,	2,554	30	,,	11,378	95
VARIOUS PRODUCTS :—						
Oranges ...	... Number	22,185	24	Number	25,402	45
Mangoes ...	...	...	1,304		...	960
Bananas ...	... Bunches	4,190	256	Bunches	4,081	291
Bay oil (9lb. per gall.)	... Lbs.	4.295	1,429	Lbs.	7,551	1,601
Hides and Skins	... Number	455	50	Number	736	159
Plantains ...	...	16	3		...	9
Arrowroot ...	...	...	...		...	...
Farine ...	... Lbs.	676	7	Lbs.	553	6
Yams ...	...	...	5		...	23
Fish oil ...	... Gall.	892	41		...	...
Bay Rum ...	... ,,	13,230	2,498	Gall.	8,057	2,202
FOREST PRODUCTS :—						
Logwood ...	... Tons	1,293	3,916	Tons	1,254	3,605
Pimento Sticks	... C. Ft.	805	87	C. Ft.	2,110	310
Firewood ...	... ,,	238,750	924	,,	270,282	2,625
Railway Sleepers	...	..	55	,,	736	41
Brooms (made from palm leaves)	... Doz.	1,388	...	,,	1,356	58
Posts ...	... C. Ft.	1,317	90		809	85
Cedar ...	... ,,	140	15	,,	299	48
Boards (native)	... ,,	1,205	82	,,	778	60
Hoe Sticks ...	... ,,	365	9	,,	295	10
Spokes ...	... ,,	323	36	,,	224	28
Charcoal ...	... Lbs.	1,157,370	1,407	Lbs.	797,440	324
Felloes ...	... C. Feet	94	18		...	...
Naves ...	... ,,	38	3		...	...
Shingles ...	... Number	2,900	2	Number	9,600	10

AGRICULTURAL INSTRUCTION IN THE PRIMARY SCHOOLS.

REPORT OF THE AGRICULTURAL SUPERINTENDENT ON THE TEACHING OF AGRICULTURE IN THE PRIMARY SCHOOLS OF ST. LUCIA DURING 1924.

The sixteenth annual examination of Primary Schools was conducted by the Agricultural Officer between October 20th, and December 9th, 1924.

Seventeen schools were examined as against sixteen last year as Babonneau School having again a male teacher has joined the course of agricultural instruction.

This is a move in the right direction when it is remembered that the majority of pupils on leaving school have to depend on agriculture for their livelihood, it is to be hoped that pupils are now coming to realise the dignity of agricultural labour, and will not be afraid later to take up such manual employment which is healthy and encourages industry.

The collections of flora for which small prizes were offered have been scanty and do not warrant continuance, it is therefore proposed that the prizes shall be given to the best school and best pupil according to marks in the Examiner's Report.

The number of pupils examined was 334, representing 85 per cent. of the children taught, the schools examined in December had many absentees, on the whole agriculture as taught is satisfactory, a better supply of tools and Primers would considerably advance both practical and theoretical work, towards this end the Department has obtained permission to distribute worn, but useful tools to deserving school gardens, seeds and plants are also distributed.

Plots of 'Gros Michel' and of 'Bout Rond' bananas are being established at each school under the supervision of an Agricultural Officer, by this means it is hoped to educate the children in the growth of a new industry.

EXAMINER'S REPORT.

Mon Repos R.C. Juvenile.

The work in this school garden has fallen off considerably; the practical demonstrations were well arranged, but the condition of the garden showed neglect, and the theoretical work was only fair.

Micoud R.C. Juvenile.

The agricultural work was satisfactory on the whole. A great deal of attention has been paid to green manuring, and the digging in of large quantities of pen manure, thus enabling useful work to be carried out on a very sandy soil. Propagating economic plants by grafting, budding, circumposition, and other methods, has been done, and the theoretical knowledge is good.

Dennery R.C. Boys'.

The theoretical knowledge was satisfactory, but the practical demonstrations were scanty. More simple experiments should be included in the practical work, and the condition of the garden could be improved by remaking, manuring and raising the beds.

Ressource R.C. Juvenile.

The condition of this school garden has improved. The plots were cropped with sugar cane, yams, potatoes, cassava and other useful plants, and several simple experiments were arranged and being carried out. Attention has been paid to the propagation of plants by grafting and budding, but the theoretical knowledge of the pupils was only fair.

Forestiere Wesleyan

The practical work and condition of this school garden was satisfactory. The soil is heavy and would be benefitted by more green dressing and pen manuring. The plots were cropped with onion, garlic, cassava, yams and many other useful plants, but the children presented were few, and their answers poor.

Canaries.

Marked improvement has been shown in agricultural work at this school. The principal garden plot is situated in a difficult spot to work, but high manuring has enabled good work to be done, and propagation of enonomic plants by grafting, forms part of the practical work. The pupils showed great interest in the practical work.

Choiseul R.C. Boys'.

The condition of the garden and the practical work was very satisfactory. The plots were stocked with most of the plants suitable to be grown as crops in the district, and many useful experiments were arranged and being carried out. Budding and grafting of economic plants on a fairly large scale, from a part of the practical work of this school.

Castries Anglican Juvenile.

The standard of agricultural work at this school was very good, use is made of every part of the garden plots, and these are continuously cropped with vegetables of all sorts. Propagation of both economic and ornamental plants by various methods is carried on extensively and the nursery work is very creditable. Both boys and girls take a keen interest in the working of the garden.

Castries R.C. Boys'.

Good work is being done in this School garden. Proper attention is given to propagation of plants especially by grafting and budding and the experiments arranged in the plots fully demonstrated the work done in class. The theoretical knowledge was good.

Castries Wesleyan.

The practical work at this school was satisfactory, and the theoretical knowledge good. The garden is small but by continuous work being done sufficient demonstrations are carried out to illustrate the work done in the class room.

Riviere Doree Juvenile.

Marked improvement was noted in the practical work done at this school. The plots are cropped with a variety of useful plants, and the experiments carried out are simple and instructive Propagation of economic plants by budding and grafting is being done on a fairly large scale, and the ornamental plots of the garden are creditably worked.

Laborie R.C. Boys'

Useful work is being done in this School garden but the beds require reforming and a liberal application of pen manure. Propagation of plants by budding requires more attention, grafting and other methods of propagation are being carried out on proper lines.

Anse-la-Raye R.C. Juvenile.

The practical work at this school garden was good. The beds were cropped with canes, cassava, peas and many other useful plants. Propagation by circumposition, budding, grafting and other methods is receiving proper attention, more manuring and green dressing is necessary here.

Soufriere R.C. Boys'.

The theoretical knowledge of this School was very good. More experimental work should be arranged with the crops growing in the garden plots. Green manuring and liberal applications of pen manure will be of great benefit.

Vieux-Fort R.C. Boys'.

The theoretical knowledge of the boys at this School has shown great improvement. The garden is subject to continuous high winds, consequently the hedges must be properly maintained to enable useful practical work to be properly carried out. Liberal applications of pen manure and green dressing as often as possible are necessary to improve the texture of the soil in this garden.

Saltibus R.C. Juvenile.

The condition of the garden was good, but more simple experiments are necessary in the arrangemen of the practical demonstrations to illustrate the work done in class. The soil is deficient in humus and requires liberal applications of pen manure. Grafting and budding should be included in the practical work.

Babonneau R.C. Juvenile.

This is practically speaking a new garden, agriculture having been discontinued at this school for some years. The work done this year was on the whole good, but the arrangement was defective. Suggestions for improvement were discussed on the spot with the Head Teacher.

Lists of Marks and Standing of Schools in Agricultural Teaching.

Schools.	No. of Pupils examined.	Condition and use made of Garden.	Practical Work and Knowledge.	Theoretical Knowledge.	Total.	Percentage.	Result Note.
Possible Marks	—	10	10	10	30	100	—
Castries Anglican Juvenile	32	10	10	9	29	96·6	E.
Castries R.C. Boys'	31	9	9	10	28	93·3	E.
Castries Wesleyan Juvenile	25	9	9	10	28	93·3	E.
Micoud R.C. Juvenile	16	8	9	10	27	90	E.
Rivière Dorée Juvenile	16	10	9	7	26	86·6	V.G.
Laborie R.C. Boys'	37	8	8	10	26	86·6	V.G.
Choiseul R.C. Boys'	16	9	9	7	25	83·3	V.G.
Dennery R.C. Boys'	9	8	8	9	25	83·3	V.G.
Anse-la-Raye R.C. Juvenile	7	9	8	7	24	80	V.G.
Soufrière R.C. Boys'	44	8	8	8	24	80	V.G.
Canaries R.C. Boys'	20	8	7	8	23	76·3	V.G.
La Resource	8	9	8	5	22	73·3	G.
Vieux-Fort R.C.	20	7	6	9	22	73·3	G.
Forestiere Wesleyan	† 3	8	9	5	22	73·3	G.
Mon Repos	19	8	8	5	21	70	G.
Saltibus R.C. Juvenile	15	7	7	6	20	66·6	G.
Babonneau	*16	8	6	6	20	66·6	G.
	334						

* 10 Girls.
† 2 „

R. W. NILES,
Examiner.

EXAMINATION OF TEACHERS IN AGRICULTURE.

The annual examination in agriculture of Probationers and Pupil Teachers was conducted by the Agricultural Department during the year. The questions were set and the answers corrected and marked by Mr. R. W. Niles, Agricultural Officer, who reported as follows:—

"Sixty-one per cent. of the candidates who presented themselves for examination obtained "more than half marks, on the whole the answers to questions showed improvement on last year's "work."

The schedule of marks received is attached.

RESULTS OF PUPIL TEACHERS' EXAMINATION. YEAR 1924.

Possible Marks...	... 100	Possible Marks...	... 100
Probationers.		Vitalis Tobie ...	... 58
Garnet Warrican ...	... 45	Anthony Pelius ...	... 68
Thomas Rismay ...	... 74	Charles Annibaffa ...	... 56
A. Faucher ...	... 60	Lawrence Lesmond ...	... 31
Eugene Henry ...	... 33	Jn. Baptiste Frederick	... 52
Joseph Alphonse ...	... 47	William Beaulieu ...	... 53
Charles Allain ...	... 42	Percival Alphonse ...	... 70
Henry Cotter ...	... 68		
Boniface Placide ...	... 55	*Second Year.*	
Frederick Smith ...	... 63	Gabriel Lubrin ...	... 67
Charles Lamontagne...	... 58	Romillien Jn. Baptiste	... 33
Felicien Fontnelle ...	... 45		
First Year.		*Third Year.*	
Filbert Cyrille ...	... 50	Charles Antoine ...	... 61
Leon Lesmond ...	... 38	Frederick P. DuBois	... 39
Martineau Nelson ...	... 68	Egbert Glace ...	... 42

(Sgd.) R. W. NILES,
Examiner.
28. 5. 25

LECTURES TO TEACHERS.

The annual course of lectures and practical demonstrations was delivered in Castries to Head Teachers and Assistant Teachers in August, the Anglican Schoolroom being kindly loaned for the five days course.

The subjects taken were as follows:—

Mycology and Entomology, in order to encourage observations and recognition of the fungus and insect pests in the Colony and elsewhere on important agricultural products;

Animal Husbandry, in view of increased local interest in pure breeds of animals;

Advanced Chemistry, was a continuation of the previous year.

Plant Improvement, consisted of the study of plant evolution and breeding methods in the light of recent research.

The Lectures were fully demonstratrated by specimens living and preserved and by experiment, sketches and diagrams; the attendance constituted a record; the attention was very good and the notes taken, some of which were examined at random, were useful.

LESSONS TO PUPILS OF THE PRIMARY SCHOOLS.

The Agricultural Officers gave verbal and practical instruction, and inspected and advised on the various School Gardens during the year, informal talks on diseases particularly Panama disease were given to the Pupils.

AGRICULTURAL WORK AND INSTRUCTION IN THE COUNTRY DISTRICTS.

A large number of visits were made by the Agricultural Officers to large and small estates and peasant gardens during the year, meetings of planters were arranged at the various schools and adresses given on banana cultivation, diseases and pests, specimens being exhibited.

A report in brief on observations and measures advised is now generally made to owners of estates after inspection; this places on record the results of investigations.

REPORT ON THE WORKING OF AGRICULTURAL CREDIT SOCIETIES.

The following report has been submitted by the Inspector of Agricultural Credit Societies for the year 1924.

In submitting this I regret to state that there has been no reasons to revise the criticisms placed on the Societies in my Annual Report for 1923, as in spite of these strictures few Societies have fully repaid their loans or amended their methods of working.

There is no doubt that this method of making loans to peasants proprietors in St. Lucia is a failure, as borrowers of money fail to realise or more probably ignore their debts, and having received a loan expend it on projects which do not realise a return ; this method if continued, instead of encouraging industry will actually support unthriftiness.

The Societies are accordingly being dissolved as fast as advances are paid up.

The Anse-la-Raye Society has failed to pay even its half-yearly interest and has thus become still more indebted.

The Societies of Gros Islet and Vieux-Fort have still unpaid loans, due to a few members who will not repay their loaned amount, these members should be sued and the Societies dissolved.

With regard to the other Societies which have not paid interest during the last two years the only remedy is to take legal action, since warnings of liability have had no effect.

REPORT ON THE WORKING OF AGRICULTURAL CREDIT SOCIETIES IN ST. LUCIA FOR THE YEAR 1924.

(Submitted by the Inspector of the Societies, R. W. Niles:)

I have the honour to submit my ninth report on the working of the Agricultural Credit Societies of St. Lucia during the period January 1st, to December 31st. 1924.

General Working of the Societies.

Nine Societies were in existence, but only eight transacted business during the year.

The Good Shepherd Society has paid off its advances and the members have been instructed to dissolve the Society.

The Societies of Gros Islet and Vieux-Fort have considerably reduced their loans and should be able to conclude payments early next year ; these Societies should then be dissolved ; the remaining six have made little progress in repaying their loans.

At the beginning of the year the Societies were indebted to the Colonial Bank to the extent of £1,264 0 4½ of this £198 12 11½ was repaid into the Bank leaving a balance of £1,065 7 5 unpaid at the close of the year ; in addition to this however, the Anse-la-Raye Society having failed to pay half-yearly interest has increased the actual balance unpaid to £1,075 12 1 at 31. 12 24.

Legal proceedings in an endeavour to collect payment were taken against three Societies, this has had no visible effect on members of other Societies.

Detailed Report.

Dennery :--The number of members at the close of the year was 78.

This Society owed the Colonial Bank at the beginning of the year £251 6 3 and members were threatened with seizure of their properties, in spite of which they paid £72 3 7 only, leaving a balance of £179 2 8 unpaid at the close of the year.

Micoud :—Fifty-six members were included in this Society at the close of the year.

The amount due the Colonial Bank at the beginning of the year was £174 8 2, members paid £32 15 5 leaving a balance of £141 12 9 unpaid at the close of the year.

Soufriere :—Seventy members were included in this Society at the close of the year, the affairs of which are very unsatisfactory.

Early in the year the Society owed the Colonial Bank £276 18 10 legal proceedings were taken and the members paid up £18 only, leaving a balance of £258 18 10 unpaid at the end of the year.

Choiseul :- Thirty-four members are incorporated in this Society, which owed £153 11 9 at the beginning of the year and paid off £13 0 10 thus a balance of £140 10 11 at the end of the year remained unpaid.

Laborie :—This Society was composed of 62 members at the end of the year.

Early in the year the amount due the Colonial Bank was £139 17 3, by repaying £22 8 7 a balance remained at the close of the year of £117 8 8 unpaid loans.

Vieux-Fort : -- This Society owed £56 0 0 at the beginning of the year and paid off £31 9 5 leaving a balance of £24 10 7 unpaid at the end of the year ; the number of members was then 44.

Gros Islet :—The number of members of this Society was 31 at the close of the year.

The amount due the Colonial Bank was £24 0 0, during the year £8 14 9½ was repaid by members a balance of £15 5 2½ remaining unpaid at the end of the year.

Anse-la-Raye :- At the beginnig of the year this Society owed £187 17 8½, and as no attempt was made to reduce this amount, even the half-yearly interest being allowed to lapse, the total debt was increased to £198 2 4½ at the close of the year ; the number of members being then forty.

Good Shepherd :—This Society transacted no business during the year.

General Remarks.

I attended several meetings of the various Societies and made strenuous efforts to get members to pay up their advances.

I beg to thank the various Parish Priests for the generous assistance they have given in matters pertaining to the working of the Societies.

Appended are :—

A. Statement of loan accounts of the various Societies.

B. Balance Sheets of the Societies reported on by the Public Auditor.

APPENDIX A.

Loan Account.

Name of Society.	Membership.	Amount of Loan 31. 12. 23.	Amount paid during 1924.	Remarks.
		£ s. d.	£ s. d.	
Dennery	78	251 6 3	72 3 7	Rate of Interest=7%.
(1) Micoud	56	174 8 2½	32 15 5	
(2) Soufrière	70	276 18 10½	18 0 0	Loans payable on 31.12. 24.
(3) Choiseul	34	153 11 9	13 0 10	
(4) Laborie	62	139 17 3	22 8 7	
(5) Vieux-Fort	44	56 0 0	31 9 5	Loans due Colonial Bank.
(6) Anse-la-Raye	40	187 17 8½	...	
Gros Islet	31	24 0 4	8 15 1½	
Good Shepherd ...	16	...	...	
	431	1264 0 4½	198 12 11½	

APPENDIX B.

Balance Sheets.

(1) MICOUD AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 1.11.24.

	Dr. £ s. d.	Cr. £ s. d.
Loan Account	10 8	
Working Account	18 18 7	
Reserve Fund		18 10 0
Cash Account (Dr. Balance.) ...		19 3
	£19 9 3	£19 9 3

Statement of Revenue and Expenditure.

Revenue.

	£ s. d.
Interest paid by members	16 9 3
Loans repaid	11 10 6
	£27 19 9

Expenditure.

	£ s. d.
Colonial Bank Loan Account... ...	16 4 1
Interest Paid	12 6 10
Honorarium to Secretary	4 10 0
Auditor's Fee	1 0 0
Rent of Office	12 0
	£34 12 11

(2) SOUFRIERE AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 1.11.24.

	Dr. £	s.	d.	Cr. £	s.	d.
Loan Account				37	13	2
Reserve Fund				19	10	0
Working Account	31	17	6			
Cash in hands of Treasurer	1	15	1			
Cash in Savings Bank		8	8			
Cash in Colonial Bank	23	1	11			
	£57	3	2	£57	3	2

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Interest paid by Members	15	1	3
Interest on Bank Deposit	1	0	0
Loans repaid	34	6	2
	£50	7	5

Expenditure.

	£	s.	d.
Colonial Bank: Interest paid... ...	19	12	5
Loan Account	33	0	0
Cost of remittance to Bank		7	4
Secretary—Salary of	6	10	0
Stationery		3	5
Auditor	1	0	0
Messenger			6
	£60	13	8

(3) CHOISEUL AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 1.11.24.

	Dr. £	s.	d.	Cr. £	s.	d.
Working Account	25	1	2			
Loan Account				23	19	8
Reserve Fund				11	8	0
Cash to credit	10	6	6			
	£35	7	8	£35	7	8

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Interest paid by members	5	18	10
Loans repaid	18	8	4
	£24	7	2

Expenditure.

	£	s.	d.
Colonial Bank Interest paid	11	3	10
Loan Account	8	0	0
Honorarium to Secretary	4	0	0
Auditor's Fee	1	0	0
Stationery		1	0
	£24	4	10

(4) LABORIE AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 8.12 24.

	Dr. £	s.	d.	Cr. £	s.	d.
Loan Account				10	4	0
Working Account					5	1
Reserve Fund				19	12	0
Cash to credit	30	1	1			
	£30	1	1	£30	1	1

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Interest paid by members	6	7	0
Loans repaid	20	19	10
	£27	6	10

Expenditure.

	£	s.	d.
Colonial Bank Interest paid	4	17	11
Loan Account	22	8	7
Stationery		3	2
Honorarium to Secretary	4	0	0
Auditor's fee	1	0	0
	£32	9	8

(5) VIEUX-FORT AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 8.12.24.

	Dr. £	s.	d.	Cr. £	s.	d.
Loan Account	3	4	6			
Working Account				8	10	11
Reserve Fund				12	0	0
Cash to Credit	17	6	5			
	£20	10	11	£20	10	11

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Loans repaid by members	25	19	0
Interest paid	10	8	0
	£36	7	0

Expenditure.

	£	s.	d.
Colonial Bank Loans repaid	24	11	0
Interest	1	19	2
Honorarium to Secretary	3	2	6
Stationery		3	8
	£29	16	11

(6) ANSE-LA-RAYE AGRICULTURAL CREDIT SOCIETY.

Balance Sheet at 8.12.24.

	Dr. £	s.	d.	Cr. £	s.	d.
Reserve Fund				9	16	0
Working Account	28	5	0			
Loan Account				21	9	4½
Cash to Credit	3	0	4½			
	£31	5	4½	£31	5	4½

Statement of Revenue and Expenditure.

Revenue.

	£	s.	d.
Interest paid by members	3	7	2
Loans repaid	2	19	0
	£6	6	2

Expenditure.

	£	s.	d.
Colonial Bank Loan Account		14	10
Stationery		1	4
Honorarium to Secretary	3	0	0
	£3	16	2

GOVERNMENT LIME JUICE FACTORY.

Crop 1924.

The Factory was open on all working days from January 3rd, to December 31st, the crop bought and handled during this period being—

2,875 barrels of limes, as against 1,969 for 1923, and
2,365 gallons of raw juice as against 2,315 for 1923,

this produced 54 casks (2,240 gallons) of concentrated lime juice.

In addition the Factory manufactured 17 casks of concentrated juice from raw juice received from planters who were unable to deal with their crop.

The local price paid for lime products was advanced from 1/6 to 2/6 per barrel of limes and from 2½d to 3¾d per gallon of raw juice delivered at the Factory, this increase was responsible for the higher out-put noted above, further advances on prices paid is necessary before peasant planters can realise sufficient profit to properly care for and extend their cultivations.

The bulk of concentrated juice and lime oils was shipped to the United States, the most attractive products were Lime oils, Concentrated lime juice remained low throughout the year.

Towards the end of August and during September a heavy crop resulted in large deliveries at the Factory which had to work day and night to deal with these, during the six weeks the rush continued.

Owing to unsold crop for 1923 a full statement was not submitted in the report for that year, this is now included:—

Balance Sheet—Crop 1923.

Expenditure.	£	s.	d.	£	s.	d.
Purchase of Produce	167	6	3			
Labour and Management	107	10	7			
Fuel and Oil	62	12	2			
Contingencies	15	8	7			
Packages	15	13	0			
Export and Sale of Produce	22	12	7			
Insurance	12	12	0	403	15	2
Other Charges.						
To Government Officials for increased duties	25	0	0			
Contribution to General Revenue towards Manager's Salary	30	0	0	55	0	0
Sinking Fund for 1922 on Loan No. 1 @ £550 @ 10%	55	0	0			
Interest on Loan No. 2 for 1922=£907 11 7 @ 5%	45	7	7			
Sinking Fund on Loan No. 2 for 1922= £1,200 @ 5%	60	0	0	160	7	7
Total Charges				£619	2	9

Receipts.			
Proceeds of Sale of Produce	564 18 8		
Manufacturing 2 Casks Concentrated juice for Planters	6 0 0		
Deficit Balance	48 4 1		
		£619 2 9	

Remarks.

From this Balance Sheet it will be seen that an expenditure of £403 15 2 returned receipts totalling £570 18 8; owing to heavy overhead charges, viz: Sinking Funds, Interests, etc., totalling £160 7 7 this turn over was insufficient to balance and a deficit of £48 4 1 is shown.

Balance Sheet—Crop 1924

Expenditure.	£ s. d.	£ s. d.
Purchase of Produce	384 15 6	
Labour and Management	129 2 8	
Fuel and Oil	122 7 3	
Contingencies	32 8 3	
Packages	32 2 3	
Export and Sale of Produce	30 15 7	
Insurance	12 12 0	744 3 6
Other Charges.		
To Government Officials for increased duties	30 0 0	
Contribution to General Revenue towards Manager's Salary ...	30 0 0	60 0 0
Final repayment on Loan No 1 ...	27 13 4	
Interest on Loan No. 2 1923 @ £847 11 7 @ 5%	42 7 7	
Sinking Fund on Loan No. 2 @ £1,200 @ 5%	60 0 0	130 0 11
Total Charges		£934 4 5
Receipts		
Proceeds of sale of Produce (at present unsold, estimated at £20 per pipe) 54 casks Concentrated Lime juice 14 cases Distilled lime oil (estimated at 6/4 per lb) -	934 7 9	
Credit Balance ...		3 4
		934 4 5
	£934 7 9	£934 7 9

ADMINISTRATION.

REPORT ON THE WORKING OF THE REUNION ESTATE AND LAND SETTLEMENT.

Land Settlement.—All the lots comprising this Settlement have been sold and with a few exceptions, paid for; fourteen holders of allotments concluded payment of instalments during the year.

As usual the lots were well cultivated and planted in ground provisions and sugar-cane, the produce being sold locally.

Revenue derived from these lots was £76 12 5 as against £83 8 5 on the previous year.

Revenue derived from House Rents was £3 19 0.

Choiseul Village Extension.—No lots were sold during the year, a few holders continued in arrears and action was taken to induce payments; the prices of the unsold lots were reduced by one-third during 1923, in order to encourage settlement.

Revenue derived from this source was £25 17 10 as against £29 14 0 for the previous year.

A list of the assessed value of the lots sold and unsold is appended.

CHOISEUL VILLAGE EXTENSION.

Assessed Value of Lots.

SOLD. Lot.	Value.			REMAINING UNSOLD ON DECEMBER 31ST, 1924. Lot.	Previous Price.			Present Price.		
	£	s.	d.		£	s.	d.	£	s.	d.
1	21	0	0							
2	9	0	0							
3	13	0	0							
4	13	0	0							
				5	9	0	0	6	0	0
				6	9	0	0	6	0	0
				7	13	0	0	8	13	4
				8	13	0	0	8	13	4
				9	9	0	0	6	0	0
				10	9	0	0	6	0	0
11	13	0	0							
12	13	0	0							
13	9	0	0							
				14	18	0	0	12	0	0
15	28	0	0							
				16	32	0	0	21	6	8
17	9	0	0							
18	13	0	0							
				19	13	0	0	8	13	4
				20	9	0	0	6	0	0
				21	9	0	0	6	0	0
				22	13	0	0	8	13	4
				23	13	0	0	8	13	4
				24	9	0	0	6	0	0
				25	9	0	0	6	0	0
				26	13	0	0	8	13	4
				27	13	0	0	8	13	4
				28	9	0	0	6	0	0
				29	27	0	0	18	0	0
				30	22	0	0	14	13	4
				31	20	0	0	13	6	8
				32	16	0	0	10	13	4
33	14	0	0							
34	16	0	0							
				35	30	0	0	20	0	0
36	27	0	0							
37	84	0	0							
Total sold	£282	0	0	Unsold	£337	0	0	£224	13	4

CORRESPONDENCE AND DISTRIBUTION OF INFORMATION ON AGRICULTURAL MATTERS.

During the year 1,225 communications including 98 Minute Papers were received and dealt with at the Agricultural Superintendent's Office; information was drawn up on Overseas Settlement and official monthly and annual returns rendered including, Blue Book, Stock Exchange, Imperial Botanical Conference, International Institute, Rome; Commercial and Industrial Museum, Montreal, and the College of Tropical Agriculture, Trinidad.

During the year the Commission appointed to report on the working of the Agricultural Department held meetings (Mr. Niles acting as Secretary) and received information and suggestions from the Agricultural Superintendent.

Several addition were made to the Library.

LOCAL COMMITTEE: BRITISH EMPIRE EXHIBITION, 1924.

The Local Committee composed of well known residents held several meetings and arranged schedule of Exhibits, collection and shipment and exhibition of these during the year.

Thirty-three cases and packages containing a representative display of the chief and minor industries of the Colony were dispatched by the Harrison Line and arrived safely at Wembley early in the year, an attractive stall being maintained during the period of the Exhibition.

A full report on work done in this connection will be rendered separately.

EXPENDITURE, REVENUE, SALE OF PLANTS, ETC.

Expenditure.

The Votes for the Agricultural Department for the year were as follows:—

Personal Emoluments	£772	0	0
Transport and Subsistence Allowance to Agr. Supdt., Inspector Agr Credit Societies and Foreman Agr. & Bot. Station, Reunion	30	0	0
Subsistence Allowance Overseer & Agricultural Officer (fixed) ...	36	0	0
Forage Allowance to Agricultural Superintendent	48	0	0
,, ,, Overseer and Agricultural Officer ...	48	0	0
Labour Ag. & Bot. Station, Reunion, and Castries Gardens ...	350	0	0
Seeds, Plants, Manures, &c., and Plant disinfection	20	0	0
Miscellaneous Requisites	50	0	0
Printing, Binding & Purchase of Books	8	0	0
Maintenance of Transport, Animals, Carts and Pedigree Pigs ...	24	0	0
Minor repairs to Buildings	10	0	0
Contingencies	10	0	0
Freight and transport of plants	5	0	0
	£1,411	0	0

The actual expenditure during the year under the above head was £1,403 0 4.

Receipts.

The receipts from the sale of plants, produce, etc., from the Agricultural Stations were as follows:—

Castries Gardens	£7	2	11
Agricultural Experiment Station ...	129	14	9
	£136	17	8

Official Visitors to the Stations.

His Honour Lt.-Colonel W. B. Davidson-Houston, C.M.G., Administrator; F. Stell, Department of Agriculture, Trinidad; S. P. Wiltshire, Imperial Bureau of Mycology, Kew, England; Professor S. F. Ashby, Imperial College of Tropical Agriculture, Trinidad and M. F. Flanagan, Esq., Auditor General, Windward Islands.

Other Visitors to the Stations.

A number of Visitors recorded their names in the Visitors' books at the Stations during the year.

STAFF CHANGES.

Mr. E. A. Walters, Agricultural Superintendent was absent on Vacation leave from March 19, to April 13th.

Mr. R. W. Niles, Agricultural Officer, was absent on Sick leave from April 17, to April 30.

Mr. E. Smith, Foreman, Agricultural Experiment Station, Reunion, was absent on Vacation leave from June 1, to June 30.

Mr. W. W. Arno, Clerk to Agricultural Superindent was absent on Sick leave from June 21, to June 24.

Miss A. M. Y. Warrican, Clerk, Government Lime Juice Factory was absent on Vacation leave from May 12, to June 12.

METEOROLOGICAL OBSERVATIONS.

Meteorological observations were recorded thrice daily at Reunion and Castries Stations.

Weather. Weather conditions in general were favourable to cultivation, an extended period of fine dry weather from February to April inclusive allowed of a good cane crop being reaped undisturbed by wet weather, but restricted planting up of other crops.

Rainfall. The rainfall recorded at the Botanic Gardens, Castries, for the year was 82·88 inches, being 2·25 inches above the average for twenty-five years, =80·63 inches; the distribution throughout the year was below the normal for March and April, when a total of only 1·09 inches fell, and above the normal in July, August and September, with a total of 41·46 inches of rain at Castries; the distribution throughout the Colony generally was normal and ranged from 49 inches precipitation on the coast to over 150 inches at 900 feet elevation, for the year.

Favourable rains in June and July promoted an extension of peasant planters ground provisions and sugar-cane.

Temperature. Temperature records show a Mean Noon temperature of 84·50° F. in the shade, and a Mean Night temperature of 72° F., the range of temperature was 27° F. (Max. 92° F., Min. 65° F.)

Pressure. Barometric Pressure was normal, Mean 29·66 inches.

A total of ten "Storm and Gale" conditions was recorded during August and September and in December; Maximum Precipitation at Reunion was recorded in a South-west gale on September 13th; the amount of "Fine days with clear sky" registered was 74·3%.

Rainfall Returns. The Agricultural Superintendent begs to thank the regular recorders for their returns, and wishes to point out to recorders who do not submit regularly that an incomplete rainfall record is very unsatisfactory for Departmental use and an unreliable guide to possible investors.

The following tables are appended :—

1. Meteorological Observations at Reunion.
2. Rainfall Returns from 29 recording stations.

APPENDIX 1.

STATION REUNION—* = 61° 3′ 20″ W. † = 13° 46′ 50″ N. H = 500ft.

Months.	Mean Pressure.	Air Temperature. = Degrees F.										Vapour Pressure (Tension of Vapour) in Millibars.				Relative Humidity. = per cent.			
		7	12	5	Mean.	Means of		Absolute Min. & Max.				7	12	5	Mean.	7	12	5	Mean.
	inches.	a.m.	noon	p.m.		Min	Max.	Min	Date	Max	Date	a.m.	noon	p.m.		a.m.	noon	p.m.	
January ...	29·75	73·5	81·5	77·6	77·5	69·7	82·7	66	16th	86	5th	21	23	22	22·4	78·2	64·1	69·9	70·7
February ...	29·72	73·3	83·5	80·4	79·0	68·9	83·3	65	2nd	87	4th	21	20	21	21·1	78·6	53·9	62·0	64·8
March ...	29·66	76·4	85·5	82·5	81·4	71·0	86·1	68	2nd	91	9th	21	20	20	20·9	70·3	49·6	51·7	57·2
April ...	29·62	78·2	87·2	83·6	83·0	72·8	87·3	69	3rd	92	30th	23	21	22	22·3	72·7	49·6	57·7	60·0
May ...	29·64	78·0	86·1	83·2	82·4	72·9	88·1	72	4th	92	23rd	25	23	23	23·9	76·5	54·5	60·5	63·8
June ...	29·66	78·9	84·7	82·2	81·9	72·1	85·5	71	6th	89	6th	25	24	25	25·1	76·5	62·0	67·5	68·6
July ...	29·68	77·7	83·5	80·1	80·4	72·8	84·0	71	18th	89	20th	25	26	25	25·9	80·5	67·3	73·5	73·7
August ...	29·62	77·8	84·7	83·0	81·8	73·1	85·0	70	21st	90	9th	25	27	27	26·8	81·0	68·0	72·3	73·7
September	29·65	78·2	84·8	83·2	82·0	73·1	85·7	70	15th	90	9th	26	26	27	26·9	83·1	65·0	72·3	73·4
October ...	29·63	78·5	84·9	80·8	81·4	73·1	84·6	71	1st	91	15th	26	28	27	27·3	80·7	69·0	76·0	75·2
November ...	29·63	78·9	84·4	80·0	81·1	73·4	84·2	69	27th	89	1st	27	26	27	27·1	81·0	66·5	80·0	75·8
December ...	29·69	76·3	82·2	78·5	79·0	71·7	82·2	69	11th	88	3rd	24	24	25	24·7	78·2	66·0	77·0	73·7
Year ...	29·66	77·1	84·5	81·2	80·9	72·0	84·8	65	2nd Feb.	92	30th April	24·6	24·4	24·6	24·5	78·1	61·2	68·3	69·2

* = The longitude of the station. † = The latitude of station. H = Height above mean sea level.

ht. = 3′ 0″ *hr.* = Rim = 1′ 0″ REUNION STATION.

Months.	Amount of Cloud.				Rainfall. (inches)			Weather. No. of Days of							Wind. No. of Observations of (at 7 a.m., 12 noon & 5 p.m.)								
	7 a.m.	12 noon	5 p.m.	Mean.	Total.	Max.	Date.	Rain.	Snow. Hail.	Thunder Storms.	Clear Sky.	Overcast.	Gales.	N.	N.E	E.	S.E.	S.	S.W	W.	NW	Calm.
January ...	5	...	5	5	4·84	0·54	4th	26	...	...	2	29	...	2	19	40	23	6	...	1	...	2
February...	6	...	4	5	1·90	0·32	18th	17	...	...	29	...	...	6	10	17	42	...	4	4	1	3
March ...	5	...	3	4	0·20	0·13	31st	5	...	...	31	...	...	2	3	1	68	5	10	1	3	...
April ...	5	...	5	5	0·76	0·15	5th	9	...	...	30	...	...	2	4	1	72	1	5	4	1	...
May ...	6	...	4	5	2·63	0·46	5th	23	...	...	29	2	...	1	2	1	79	..	8	1	1	...
June ...	5	...	6	5	5·54	0·74	4th	23	...	2	22	8	...	2	1	3	80	...	3	1	...	...
July ...	6	...	6	6	10·16	1·60	31st	27	...	2	17	14	1	2	3	2	80	2	1	...	...	3
August ...	5	...	5	5	11·24	3·20	15th	25	...	5	21	10	2	1	...	13	64	7	1	...	...	7
September	5	...	5	5	6·84	3·32	13th	22	...	7	22	8	2	...	1	27	43	11	2	...	...	6
October ...	5	...	5	5	8·45	1·54	28th	26	...	1	24	7	...	...	...	33	34	13	1	...	...	12
November	5	...	6	5	5·18	1·34	29th	21	...	2	24	6	1	...	1	21	58	7	...	...	..	3
December .	7	...	5	6	6·31	0·78	20th	30	...	...	21	10	4	...	...	36	54	1	...	...	...	2
Year ...	5	...	4	5·0	64·05	3·32	13th Sep.	254	...	19	272	94	10	18	44	195	697	53	35	12	6	38
								%= 69·3	...	5·1	74·3	25·6	2·7	%= 1·6	4·0	17·7	63·5	4·8	3·2	1·1	0·6	3·5

ht. = Height of the Therms. above the ground in feet. *hr.* = Height of the Raingauge above the ground in feet

APPENDIX II.

RAINFALL RETURNS, 1924.

Observation Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Maximum in one day and date.		No. of days on which rain fell.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.		
Reduit Estate. Castries...	3·04	1·15	·18	·35	3·39	5·41	10·38	9·75	6·78	7·65	3·50	4·38	55·96	2·56	Sep. 14th	160
Corinth ,, ,, ...	5·42	2·52	·30	·66	4·72	8·83	16·53	13·90	10·53	12·76	5·10	5·84	87·11	3·02	,, 14th	152
Marquis ,, ,, ...	4·20	4·01	·37	·74	4·14	5·96	10·40	17·62	6·45	11·67	6·50	3·98	76·04	3·00	Aug. 15th	245
Choc ,, ,, ...	4 14	2·62	·36	·30	3·51	8·28	13·11	13·35	9·73	8·11	6·25	5·42	75 18	2·80	Sep. 14th	192
Botanic Gardens ,, ...	4·87	3·19	·55	·54	5·15	6·46	15·42	14·97	11·07	7·74	6·58	6·34	82·88	2·55	Aug. 17th	258
Government House ,, ...	2·68	1·75	·21	·24	3·51	4·80	10·40	15·53	8·23	5·89	4·64	4·59	62·47	3·63	,, 15th	199
The Barracks, Vigie, ,, ...	4·38	2·24	·48	·49	3·51	5·51	13·42	14·63	8·10	6·37	3·49	5·49	68·11	3·25	,, 15th	216
Cr. Lands, Cul-de-Sac ,, ...	6·67	2·85	·68	·67	6·94	9·45	19·76	16·60	14·05	9·63	10·76	7·58	105·64	4·25	,, 15th	193
Belair Est., Roseau, Anse-la-Raye ...	5·87	2·40	1·35	1·43	3·83	6·38	13·24	16·49	9·02	8·12	7·44	7·01	82·58	5·10	,, 15th	175
Uplyme Estate ,, ...	11·03	4·03	1·65	2·45	11·32	14·39	19·87	23·08	16·76	18·87	13·72	13·84	151·01	5·10	,, 15th	265
Invergoil ,, ,, ...	10·34	·74	·24	·24	1·67	5·13	8·18	13·08	16·69	8·36	2·94	3·26	70·87	4·40	Oct. 5th	225
La Perle ,, Soufrière...	8·76	2·69	·78	·48	3·19	7·35	16·65	16·06	10·08	9·07	8·96	11·25	95·32	3·30	Aug. 17th	213
Ruby ,, ,, ...	8·88	2·70	·74	·65	2·73	7·26	15·95	16·21	9·72	8·92	8·62	9·94	92·32	3·25	,, 17th	228
Union Vale ,, ,, ...	6·50	1·68	·26	1·06	3·47	7·48	15·23	15·04	9·83	9·43	6·92	8·19	85·09	5·25	Sep. 15th	201
Agric & Bot. Station Choiseul	4·84	1·90	·20	·76	2·63	5·54	10·16	11·24	6·84	8·45	5·18	6·31	64·05	3·32	,, 13th	254
Park Estate ,, ...	7·02	4·66	·64	1·65	5·65	10·78	17·99	16·49	7·85	11·54	7·89	8·45	100·61	3·79	,, 13th	245
Woodlands Estate ,, ...	7·32	5·77	·71	1·54	6·93	13·64	18·27	22·73	8·68	14·79	10·42	9·25	120·05	4·20	Aug. 15th	190
Londonderry ,, Laborie	6·03	3·56	·52	1·24	5·21	10·30	16·34	12·64	7·98	10·15	5·38	6·10	85·45	3·59	Sep. 14th	251
Black Bay ,, ,, ...	3·51	2·42	...	.77	1·70	7·77	11·35	8·84	4·18	10·14	5·50	5·30	61·48	3·50	Nov. 3rd	128
Retraite Est. Vieux-Fort	3·95	2·62	·47	1·10	3·11	9·76	13·03	10·41	4·37	10·28	5·76	6·19	71·05	2·54	Oct. 6th	180
Moule-à-Chique ,,	1·97	·75	·09	·28	·65	6·42	7·38	7·34	5·86	11·69	3·91	2·81	49·15	2·47	,, 5th	157
Beausejour Estate ,, ...	3·22	1·78	·25	·62	2·01	7·83	10·94	9·86	3·96	9·81	4·07	5·37	59·72	3·20	,, 6th	157
Pointe Sable ,, ,, ...	3·02	1·35	·15	·06	1·65	8·45	9·17	8·91	4·34	12·40	4·04	3·62	57·16	2·95	,, 6th	162
Troumassée ,, Micoud	2·53	2·31	·85	·65	5·75	5·90	8·80	10·83	2·97	9·39	3·75	4·74	58·47	5·85	Aug. 16th	68
Mamiku ,, Dennery	3·02	1·75	·82	·67	2·95	8·36	10·14	11·49	4·64	10·74	5·45	3·22	63·25	3·16	,, 15th	247
Errard ,, ,, ...	5·29	3·62	·71	1·19	4·49	8·59	12·38	19·46	5·29	14·68	8·26	7·08	91·04	4·57	,, 15th	229
La Cayé ,, ,, ...	3·35	2·09	·45	·39	3·47	5·95	11·25	13·88	6·81	7·86	4·45	3·79	63·74	3·32	,, 15th	117
Resource ,, ,, ...	3·45	2·19	·03	1·19	2·86	5·51	10·28	14·78	7·47	7·51	5·40	4·65	65·32	3·00	,, 15th	166
Richfond ,, ,, ...	3·10	2·29	·63	·83	3·62	5·79	9·87	15·07	8·43	7·16	5·67	4·49	66·95	3·71	,, 15th	165

ERNEST A. WALTERS,
Agricultural Superintendent.

PRICE LIST OF NURSERY PLANTS, ETC.

The prices of plants do not include the cost of the boxes or baskets.

All prices specified are for plants of ordinary quality. The prices of plants not included in this list will be fixed by the Agricultural Superintendent.

An addition of 50% is made on the prices for all plants supplied for export from the Colony.

No plants are supplied on Public Holidays.

At least six months previous notice must be given when large quantities of such plants as Coffee, Cacao, Rubber, Nutmegs, Bananas, etc., are required as it is not feasible to keep large supplies of these on hand. At least ten months' notice is required for large supplies of plants such as Para Rubber, the seeds for which have to be specially imported.

Complaints as to the quality or quantity of plants, etc., supplied, or as to the prices charged, should be made in writing and will be referred to the Agricultural Superintendent.

PLANTS.

Oranges budded	6d per plant
„ Sour	3d „
Mangoes grafted	1/- „
Lime plants	1/- per hundred
Coffee plants	2/6 „
Cacao	2d per plant
Eucalyptus	2d „
Avocado pear	3d „
Guava	3d „
Casuarinas	1d „
Palms various	6d „
Ornamental plants (various)	2d to 1/- per plant
Seeds per lb. (various)	3d to 6d per lb.
Seeds Vegetable	4d to 6d per packet
Plants for wind-breaks, hedges, etc., other than the above economics	1d to 2d per plant.

E. A. WALTERS,
Agricultural Superintendent